

WHAT IS CLAIMED IS:

1. A conveyor suitable for conveying objects along a transport direction, the conveyor comprising:
a plurality of connected links, each link having a length extending across the direction of transport and a width extending along the direction of transport, each link having a conveying surface and at least one gripping member extending from the conveying surface of the link, each gripping member being moveable from a first opened position to a second gripping position, the gripping member including a gripping arm configured to be slidable relative to the conveying surface of the link when the gripping member moves from the first position to the second position, the gripping arm being located so as to be able to contact one of the objects when the gripping member is in the second position to hold the object relative to the link during transport.
2. The conveyor of claim 1, wherein each link includes a spring member, and each gripping member is urged toward the second position by the spring member.
3. The conveyor of claim 1, wherein the conveyor includes a cam member for urging the gripping members toward the first position.
4. The conveyor of claim 3, wherein each link includes a cam follower for contacting the cam member.
5. The conveyor of claim 1, wherein the gripping arm is linearly slidable.
6. The conveyor of claim 1, wherein the gripping arm is arcuately slidable.
7. The conveyor of claim 1, wherein the conveyor is configured so that the gripping members can grip and convey the objects in an inverted position with the objects located substantially below the links.

8. The conveyor of claim 1, wherein each gripping member pivots relative to its respective link when moving from the first position to the second position.

9. The conveyor of claim 1, wherein each gripping member pivots about an axis substantially perpendicular to the direction of transport when moving from the first position to the second position.

10. The conveyor of claim 1, wherein each link includes a body and a slider slidable along the body, at least one cam follower being mounted on the slider.

11. The conveyor of claim 10, wherein the slider is integral with the gripping member.

12. The conveyor of claim 10, wherein the slider is moveable relative to the gripping member.

13. The conveyor of claim 1, wherein the gripping arm includes a pin.

14. The conveyor of claim 13, wherein the gripping member includes a flexible fence attached to the pins of more than one of the links.

15. The conveyor of claim 1, wherein the second position is self-adjustable depending on the size of the object.

16. The conveyor of claim 1, wherein the gripping members each include a plate.

17. The conveyor of claim 1, wherein the links are configured so as to be spaced along the direction of transport so that at least two gripping members on adjacent links may contact an object.

18. The conveyor of claim 1, wherein the conveyor includes two of the gripping arms, oppositely disposed so as to be able to grip an object therebetween.

19. The conveyor of claim 18, wherein the two gripping arms on each link are configured to move toward each other when moving from the first position to the second position.

20. The conveyor of claim 1, wherein each link includes at least one fence member, the gripping arm gripping the object between the gripping arm and the fence member when the gripping member is in the second position.

21. The conveyor of claim 20, wherein the fence member includes at least one of a pin, two pins, a fixed wall, or an adapter mounted on one or more pins.

22. The conveyor of claim 20, wherein the location of the fence member is selectable between a plurality of predetermined positions.

23. The conveyor of claim 1, the conveyor further including connection elements for connecting the links.

24. The conveyor of claim 23, wherein the connection elements include a knuckle conveyor having knuckle links attached to conveying platform members, the links being connected to the platform members.

25. The conveyor of claim 23, wherein the connection elements include a knuckle conveyor having knuckle links, the links being attached to the knuckle links.

26. The conveyor of claim 1, wherein the conveyor is configured so that the gripping arms can grip and convey the objects with the objects spaced from the conveying surface.

27. The conveyor of claim 1, wherein the conveyor is configured so that conveyed objects can be removed from the gripping arms when the gripping members are in the second gripping position.

28. A link for a conveyor suitable for conveying objects along a transport direction, the link comprising:

a link body having a length extending across the direction of transport and a width extending along the direction of transport, each link body having a conveying surface and at least one gripping member extending from the conveying surface of the link body, each gripping member being moveable from a first opened position to a second gripping position, the gripping member including a gripping arm configured to be slidable relative to the conveying surface of the link body when the gripping member moves from the first position to the second position, the gripping arm being located so as to be able to contact one of the objects when the gripping member is in the second position to hold the object relative to the link body during transport.

29. The link of claim 28, further including a spring member, and each gripping member is urged toward the second position by the spring member.

30. The link of claim 28, further including a cam follower for contacting a cam member.

31. The link of claim 28, wherein the gripping arm is linearly slidable.

32. The link of claim 28, wherein the gripping arm is arcuately slidable.

33. The link of claim 28, wherein the link is configured so that the gripping arm can grip and convey the objects in an inverted position with the objects located substantially below the links.

34. The link of claim 28, wherein the gripping member pivots relative to the link body when moving from the first position to the second position.

35. The link of claim 28, wherein the gripping member pivots about an axis substantially perpendicular to the direction of transport when moving from the first position to the second position.

36. The link of claim 28, further including a slider slidable along the link body, at least one cam follower being mounted on the slider.

37. The link of claim 36, wherein the slider is integral with the gripping member.

38. The link of claim 36, wherein the slider is moveable relative to the gripping member.

39. The link of claim 28, wherein the gripping arm includes a pin.

40. The link of claim 28, wherein the second position is self-adjustable depending on the size of the object.

41. The link of claim 28, wherein the gripping member includes a plate.

42. The link of claim 28, wherein the link includes two of the gripping arms, oppositely disposed so as to be able to grip an object therebetween.

43. The link of claim 42, wherein the two gripping arms are configured to move toward each other when moving from the first position to the second position.

44. The link of claim 28, further including at least one fence member, the gripping arm gripping the object between the gripping arm and the fence member when the gripping member is in the second position.

45. The link of claim 44, wherein the fence member includes at least one of a pin, two pins, a fixed wall, or an adapter mounted on one or more pins.

46. The link of claim 44, wherein the location of the fence member is selectable between a plurality of predetermined positions.

47. The link of claim 28, wherein the link is configured so that the gripping arm can grip and convey the objects with the objects spaced from the conveying surface.

48. The link of claim 28, wherein the link is configured so that conveyed objects can be removed from the gripping arm when the gripping member is in the second gripping position.

49. A link for a conveyor suitable for conveying objects along a transport direction, the link comprising:

a link body having a length extending across the direction of transport and a width extending along the direction of transport, each link body having a conveying surface; and at least one gripping member movably secured to the link body and having a gripping arm extendable from the conveying surface of the link body, each gripping member being moveable between a first opened position and a second gripping position, the gripping arm being located so as to be able to contact one of the objects when the gripping member is in the second position to hold the object relative to the link body during transport.

50. The link of claim 49, further including means for urging the gripping member toward the second position.

51. The link of claim 50, wherein the means for urging includes a gear drive mechanism.

52. The link of claim 51, wherein the gear drive mechanism includes a rack and pinion arrangement with a pinion portion located on the gripping member and a rack portion located on a slider member, the slider being slidable relative to the link body to thereby move the gripping member via the rack and pinion arrangement.

53. The link of claim 50, wherein the means for urging includes at least one cam follower located on a slider member, the slider being slidable relative to the link body to thereby move the gripping member

54. The link of claim 50, wherein the means for urging includes a spring member.

55. The link of claim 54, wherein the spring member is one of a compression spring or a tension spring.

56. The link of claim 49, wherein the link is configured so that the gripping arm can grip and convey the objects in an inverted position with the objects located substantially below the links.

57. The link of claim 49, wherein the gripping member pivots relative to the link body when moving from the first position to the second position.

58. The link of claim 49, wherein the gripping member pivots about an axis substantially perpendicular to the direction of transport when moving from the first position to the second position.

59. The link of claim 49, further including a slider slidable along the link body, at least one cam follower being mounted on the slider.

60. The link of claim 59, wherein the slider is integral with the gripping member.

61. The link of claim 59, wherein the slider is moveable relative to the gripping member.

62. The link of claim 49, wherein the second position is self-adjustable depending on the size of the object.

63. The link of claim 49, wherein the link includes two of the gripping arms, oppositely disposed so as to be able to grip an object therebetween.

64. The link of claim 63, wherein the two gripping arms are configured to move toward each other when moving from the first position to the second position.

65. The link of claim 49, further including at least one fence member, the gripping arm gripping the object between the gripping arm and the fence member when the gripping member is in the second position.

66. The link of claim 49, wherein the link is configured so that the gripping arm can grip and convey the objects with the objects spaced from the conveying surface.

67. The link of claim 49, wherein the link is configured so that conveyed objects can be removed from the gripping arm when the gripping member is in the second gripping position.

70. The link of claim 49, wherein the gripping member pivots relative to the link body when moving from the first position to the second position.

71. The link of claim 49, wherein the gripping member slides relative to the link body when moving from the first position to the second position.

72. The link of claim 49, wherein the gripping member pivots and slides relative to the link body when moving from the first position to the second position.